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# Mobile Survey Report - 2012

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# Mobile Survey Report - 2012

## Report Highlights

The 2012 mobile survey was designed and administered by the Mobile Library Group. Its goals were 1) to see how university mobile use has changed over time, and 2) to learn about use of MLibrary mobile services, which were released after 2009. It was conducted online, using Qualtrics, and was active from 19 January – 21 February, 2012.

### Respondents

In total, the survey attracted 2400 respondents. Roughly 90% of our respondent pool was students (1505 undergraduates and 651 graduate students). The remaining 10% consisted of 69 faculty respondents, 84 university staff respondents, and a smattering of researchers and people of other statuses. Most university units were represented by at least 1 respondent. LS&A had the most respondents (1114, or 48%), followed by the College of Engineering (458, or 20%), the School of Business (98, or 4%), and the School of Education (77, or 3%).

### Devices

Smartphones were by far the most common device at 70% (1656) ownership. However, almost a quarter of our respondents (24%, or 556 respondents) still reported using a mobile phone without internet, making it the next most common device. 49% (1166) of respondents reported using more than one mobile device. Only 2% (45) of respondents said they did not have a mobile device.

### General use of mobile devices

The most frequently reported activity on mobile device(s) was text messaging, at 89% (2004) of respondents. The next most common activity was accessing email (85%, or 1930 respondents), followed by participating in social networks (72%, or 1623 respondents) and listening to music/audiobooks/podcasts (71%, or 1598 respondents).

### Use of MLibrary services

46% of respondents had used at least one MLibrary service on their mobile device. Finding library hours and locations was the most common task at 32% (673), followed by searching the catalog at 28% (585).

Of the potential services listed, texting to renew books was the most popular, with 64% (1387) of respondents saying they would use the service. Getting due date reminders by text message was next most popular (63%, or 1374 respondents), followed by bar code scanning (59%, or 1287 respondents), searching databases (58%, or 1253 respondents), and finding available computers (53%, or 1156 respondents).

### General Comments

The survey asked several free text response questions about the impact of existing MLibrary services and what the library can do to make them better. Responses varied widely, with many respondents saying that we should promote mobile services more. They also recommended the addition of services like stack navigation and ebook checkout.

**Sample comments:**

How could the library improve existing mobile-friendly services and resources?

- I think it's excellent now!
- The mobile app is good, but could be better. I would like to have the ability to search articlesplus on it.

How has mobile access to library resources and services changed your work?

- I can now look for journal articles anywhere, which gives me something productive to do on the bus instead of playing angry birds. I really appreciate Mirlyn mobile!

What additional services or activities should the library provide for mobile device users?

- Text tattling on annoying people talking singing or otherwise carrying on in the stacks or reference room
- An app that would help me navigate through the stacks?
- Loaning system for ebooks – this is already a working service at public libraries, so the technology is already in use and available. Increase availability of materials through such a system should be an important goal (environmental benefits, no physical limitations on carrying around several books, etc....)

Is there anything else you would like to share with us regarding mobile devices and library services?

- I honestly had no idea that any mobile library services existed, so maybe you can make it more publicized.
- Thank you for working so hard to help us!

## Project Description

This survey was designed and administered by the Mobile Library Group: Karen Reiman-Sendi (chair), Anne Beaubien, Suzanne Chapman, Kathleen Folger, Gary Munce, with considerable assistance from Sonali Mishra and Steve Lonn. The survey was intended as a follow-up to the mobile survey conducted in winter 2009 ([http://www.lib.umich.edu/files/usability\\_reports/Mobile%20Survey%20Report\\_Final.pdf](http://www.lib.umich.edu/files/usability_reports/Mobile%20Survey%20Report_Final.pdf)).

This survey had two primary goals: 1) to see how university mobile use has changed over time, and 2) to learn about use of MLibrary mobile services, which were released after 2009.

## Methodology

The survey was conducted online only, using Qualtrics. Respondents were offered the option to enter a raffle for one of four \$50 visa gift cards (library employees were not eligible for the raffle). See Appendix A for the full survey.

- Advertised from:
  - Library website spotlight (see Appendix B)
  - CTools (from 14 February<sup>1</sup> to 21 February, 2012)
  - Paper table tents set up in Hatcher and Shapiro (see Appendix B)
- Active from:
  - 19 January – 21 February, 2012
- Total responses:
  - 2400 total responses
  - 2261 number completed (answered every question, including optional ones)

## Survey Results and Analysis

### 1. What is your current University of Michigan status?

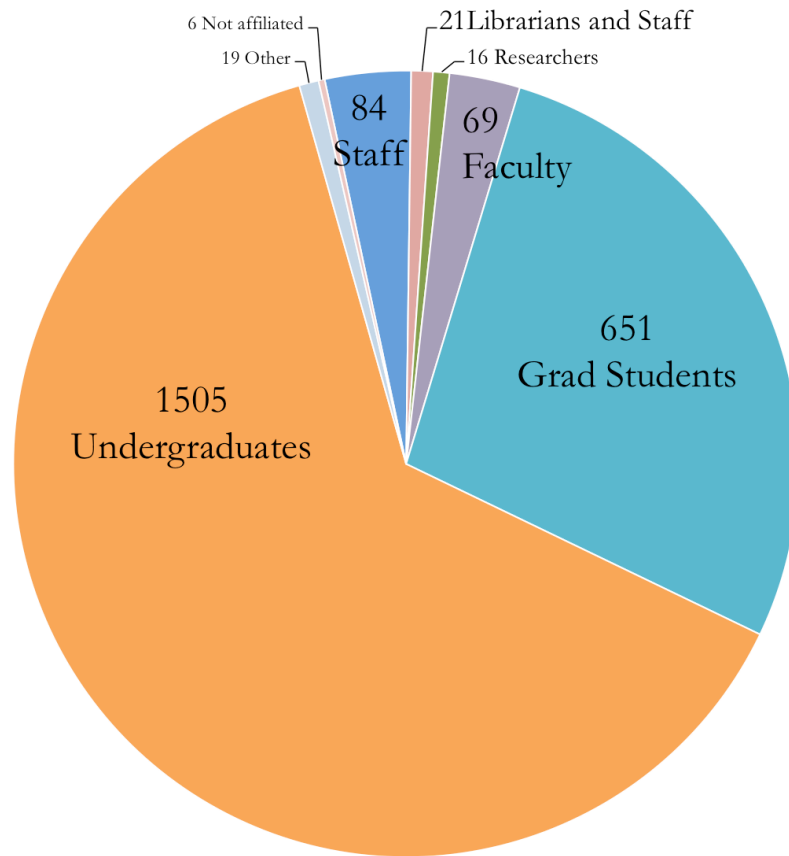
Roughly 90% of our respondent pool was students (1,505 undergraduates and 651 graduate students). The remaining 10% consisted of 69 faculty respondents, 84 university staff respondents, and a smattering of researchers and people of other statuses.

Note that the numbers below sum to 2371 rather than 2400, indicating that some respondents exited the survey before answering this question.

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<sup>1</sup> At the time of this report writing, the exact date of the survey's being put on Ctools is uncertain; however, we know it was up for about a week, and that it was taken down on 21 February.

Figure 1. Respondent breakdown by status



## 2. What school or college are you *primarily* affiliated with? Please select one.

Most university units were represented by at least 1 respondent. LS&A, as the largest academic unit in the University, had the most respondents (1114, or about 48%), followed by the College of Engineering (458, or about 20%), the School of Business (98, or about 4%), and the School of Education (77, or about 3%). There were no respondents from the Athletics or Museums units.

Table 1. Number of respondents by unit

Unit	Response
College of Architecture and Urban Planning	26
School of Art and Design	16
School of Business	98
Business / Financial Operations (not school / college affiliated)	3
Central Administration	4
School of Dentistry	13
School of Education	77
College of Engineering	458
Facilities / Operations	1
Health Services	5
School of Information	51
Institute or Center (not affiliated with Health Services)	4
School of Kinesiology	29
Law School	59
Libraries	19
College of Literature, Science and the Arts	1114
Medical School	32
School of Music, Theatre & Dance	34
School of Natural Resources and Environment	23
School of Nursing	69
Officer Education Programs	1
College of Pharmacy	24
School of Public Health	84
School of Public Policy	15
School of Social Work	41
Other	33

See Appendix C for breakdown of respondent status by unit. Note that these affiliations sum to 2333 due to a slight attrition in respondents.

### 3. Which of the following types of mobile devices do you currently use?

As in the 2009 survey, mobile phones with internet (smartphones) were the most common mobile device. The percentage of smartphone owners has increased slightly, going from about 62% to about 70%. In the 2009 survey, the total number of respondents that had iPod Touches was greater than the total number that had mobile phones that could not access webpages, which is reversed in the current survey. However, in both surveys the ratios are close (16 to 14 in the last survey, 556 to 512 here).

Many of the respondents who selected 'other' said that their other device was a laptop of some variety. Since netbooks are not typically classed as mobile devices, it is possible that respondents reported their laptops because the inclusion of 'netbook' among the possible responses blurred their conceptions of what counts as a mobile device.

Of those who said they do not have a mobile device, only 9 said they intended to purchase one in the next 12 months. Because this population is so small, these respondents' answers are not specially investigated in our data analysis.

Table 2. Ownership of mobile device(s) (all respondents)

Device	Response	%
Netbook computer (screen size under 11", e.g. Gateway Netbook, Lenovo Ideapad Netbook, HP Mini Netbook, etc.)	401	17%
Tablet device (e.g. Apple iPad, Samsung Galaxy Tab, Amazon Kindle Fire, etc.)	407	17%
Dedicated e-book reader (e.g. Amazon Kindle, Barnes & Noble Nook, Sony Reader, etc.)	310	13%
iPod Touch	512	22%
Mobile phone with internet (e.g. iPhone, Blackberry, Droid, etc.)	1,656	70%
Mobile phone without internet	556	24%
Other (please describe)	44	2%
I don't have a mobile device	45	2%

## Multiple Device Ownership

238 respondents (10%) reported having a phone without internet as their only mobile device.

In general, far more respondents reported having multiple devices than did in 2009. In 2009, only 12 out of 60 respondents (20%) said they use more than one device. In the current survey, 1166 respondents, or about 49%, said they use more than one mobile device.

Looking at the other devices used by smartphone users, we find the following:

- Smartphone alone: 814 (49% of smartphone users)
- Smartphone & netbook = 284 (17%)
  - Smartphone, netbook, and at least one other device = 143 (9%)
- Smartphone & tablet = 328 (20%)
  - Smartphone, tablet, and at least one other device = 145 (9%)
- Smartphone & ebook reader = 227 (14%)
  - Smartphone, ebook reader, and at least one other device = 126 (8%)
- Smartphone & iPod Touch = 281 (17%)

- Smartphone, iPod Touch, and at least one other device = 132 (8%)
- Smartphone & phone without internet = 15 (1%)
  - Smartphone, phone without internet, and at least one other device = 11 (.7%)

## Device Ownership by Status

Faculty, staff, and researchers reported highest percentage ownership of most of the individual devices named in the survey, while undergraduates often hovered near or at the bottom. Undergraduates were also least likely to own multiple mobile devices – 47% (703) reported using more than one, compared to 54% (347) of graduate students, 53% (36) of faculty, 59% (48) of staff, 53% (10) of librarians/library staff, and 63% (10) of researchers. Undergraduates' relatively low percent use of most mobile devices may be due to their generally lower incomes. Low incomes may also explain why faculty, researchers, and graduate students were more likely to own smartphones than undergraduates were. The only device that undergrads were most likely to own was the iPod Touch, which may be because it functions as a cheaper substitute for a smartphone. iPod Touches were actually relatively unpopular with other groups, ranking below most other mobile devices in percent ownership (see Appendix D for full chart of device use by status).

## Device Ownership by Discipline

Although many individual affiliations had too few respondents to analyze individually, we clustered several affiliations into the following groups:

- STEM (Science, Technology, Engineering, and Mathematics) (685, or 29% of total respondents)
  - School of Dentistry (13)
  - College of Engineering (458)
  - Health Services (5)
  - Medical School (32)
  - School of Nursing (69)
  - College of Pharmacy (24)
  - School of Public Health (84)
- Arts and Humanities (76, or 3% of total respondents)
  - College of Architecture and Urban Planning (26)
  - School of Art and Design (16)
  - School of Music, Theatre & Dance (34)
- Social Sciences (341, or 15% of total respondents)
  - School of Business (98)
  - School of Education (77)
  - School of Information (51)



- Law School (59)
- School of Public Policy (15)
- School of Social Work (41)
- College of Literature, Science, and the Arts (1114, or 48% of total respondents)

Between these disciplines, there was some variety of device ownership. STEM and Social Sciences respondents were substantially more likely to own tablet devices than LSA and Arts and Humanities (A/H) respondents: 20% (134) of STEM respondents and 21% (71) of Social Science respondents reported using tablets, as opposed to 14% (154) of LSA respondents and 12% (9) of A/H respondents. Social Sciences (SoSci) respondents were also noticeably more likely than other groups to own e-reading devices (18%, or 61 respondents), while A/H respondents were noticeably less likely than other groups (8%, or 6 respondents).

Table 3. Ownership of mobile device(s) by discipline

Device	STEM	LSA	A/H	SoSci
Netbook computer (screen size under 11", e.g. Gateway Netbook, Lenovo Ideapad Netbook, HP Mini Netbook, etc.)	124 (18%)	178 (16%)	12 (16%)	64 (19%)
Tablet device (e.g. Apple iPad, Samsung Galaxy Tab, Amazon Kindle Fire, etc.)	134 (20%)	154 (14%)	9 (12%)	71 (21%)
Dedicated e-book reader (e.g. Amazon Kindle, Barnes & Noble Nook, Sony Reader, etc.)	86 (13%)	129 (12%)	6 (8%)	61 (18%)
iPod Touch	147 (21%)	276 (25%)	19 (25%)	49 (14%)
Mobile phone with internet (e.g. iPhone, Blackberry, Droid, etc.)	498 (73%)	767 (69%)	46 (61%)	262 (77%)
Mobile phone without internet	159 (23%)	265 (24%)	20 (26%)	65 (19%)
Other (please describe)	18 (3%)	16 (1%)	1 (1%)	7 (2%)
I don't have a mobile device	9 (1%)	24 (2%)	2 (3%)	8 (2%)

#### 4. Which of the following activities do you do on your mobile device(s)?

Across the entire pool of respondents, the most frequently reported activity was sending and receiving text messages, which can be done on both smart phones and regular phones. The next most common activity was accessing email, followed by participating in social networks and listening to music, audio books, or podcasts.

Table 4. Tasks performed on mobile devices (all respondents)

Answer	Response	%
Access email	1,930	85%
Listen to music or audio books or podcasts	1,598	71%
Participate in social networking sites (e.g. Facebook, Twitter)	1,623	72%
Play games	1,484	66%
Read stuff for research/class (e.g. books, journal articles)	952	42%
Read stuff for fun (e.g. news articles, blogs, books)	1,444	64%
Search for information (e.g. getting directions, weather, locations, etc.)	1,814	80%
Send/receive text messages	2,004	89%
Use CTools	1,287	57%
Use QR codes	282	12%
Watch videos or screencasts	1,001	44%

Among smartphone users, the number of respondents who reported using QR codes was quite low (262, or 16% of respondents using smartphones), suggesting that QR codes might not be the most effective way to link people to sites, and should be used in conjunction with URLs in promotional materials.

## Activities performed by discipline

In general, Arts and Humanities respondents were less likely to perform activities on their mobile devices than other disciplines by a slight margin. For all activities except using QR codes, Arts and Humanities respondents were least likely to report performing the activity.

Table 6. Activities performed on mobile devices by discipline

Activity	STEM	LSA	A/H	SoSci
Access email	580 (88%)	902 (84%)	59 (83%)	286 (88%)
Listen to music or audio books or podcasts	467 (71%)	766 (72%)	50 (70%)	226 (70%)
Participate in social networking sites (e.g. Facebook, Twitter)	461 (70%)	784 (73%)	48 (68%)	249 (77%)
Play games	440 (67%)	730 (68%)	38 (54%)	204 (63%)
Read stuff for research/class (e.g. books, journal articles)	288 (44%)	437 (41%)	24 (34%)	151 (46%)
Read stuff for fun (e.g. news articles, blogs, books)	431 (65%)	658 (61%)	39 (55%)	227 (70%)
Search for information (e.g. getting directions, weather, locations, etc.)	550 (83%)	847 (79%)	51 (72%)	268 (82%)
Send/receive text messages	588 (89%)	966 (90%)	55 (77%)	292 (90%)
Use CTools	414 (63%)	618 (58%)	36 (51%)	171 (53%)
Use QR codes	107 (16%)	93 (9%)	9 (13%)	49 (15%)
Watch videos or screencasts	303 (46%)	474 (44%)	25 (35%)	145 (45%)

## Increase in reading of scholarly material

Based on a similarly worded question on the 2009 survey, the data suggests that reading of scholarly material on mobile devices has increased. Note that because the questions were not worded identically, the comparison is unclear because these tasks do not match up exactly with those listed in the 2009 survey. For example, viewing webpages and reading e-books, two activities from the 2009 survey, might fall under either 'read stuff for research/class' or 'read stuff for fun' in this survey, depending on the purpose for which the webpage or book is read.

In the current survey, 42% (952) of respondents to this survey said they read materials for research/class. In 2009, 17% (10) of respondents said they find/read ebooks on their mobile devices, and 18% (11) said they find/read journal articles.

Pleasure reading seems to have remained constant. In the current survey, 64% (1444) said they read things for fun. In 2009, 65% (39) said they find news and events information on their mobile devices, 75% (45) said they view webpages, and 25% (15) said they read blogs.

## Devices used for scholarly reading

952 (42%) respondents reported reading materials for research or class on their mobile devices. Although the survey did not allow respondents to specify which activities they performed on which devices (647 (68%) of those respondents have multiple devices), we can see that a much higher percentage of people who read things for research/class on their mobile devices have tablets (31%) than do in the general respondent pool (17%). It is possible that many of these respondents do at least some of their work-related reading on their tablets; however, they clearly use other devices for this purpose as well, since tablet ownership is still only about 31%.

Table 5. Devices owned by respondents who read things for research/class on their mobile device(s)

Answer	Response	%
Netbook computer (screen size under 11", e.g. Gateway Netbook, Lenovo Ideapad Netbook, HP Mini Netbook, etc.)	251	26%
Tablet device (e.g. Apple iPad, Samsung Galaxy Tab, Amazon Kindle Fire, etc.)	293	31%
Dedicated e-book reader (e.g. Amazon Kindle, Barnes & Noble Nook, Sony Reader, etc.)	187	20%
iPod Touch	227	24%
Mobile phone with internet (e.g. iPhone, Blackberry, Droid, etc.)	746	78%
Mobile phone without internet	161	17%
Other (please describe)	22	2%
I don't have a mobile device	0	0%

## Activities performed on phones without internet

Out of 238 respondents who said the **only** mobile device they have is a mobile phone without internet (meaning they didn't even specify 'other'), we found the following reported use of features:

Table 7. Activities performed on mobile devices without internet

Activity	Response
Access email	6
Listen to music/audio books/podcasts	15
Participate in social networking sites	7
Play games	30
Read stuff for research/class	1
Search for information	4
Send/receive text messages	197
Use Ctools	0
Use QR codes	0
Watch videos or screencasts	1

These reports suggest that some respondents who said they have a mobile phone without internet actually have a web-enabled phone that perhaps has no data plan. This could be a smartphone or a feature phone. For example, some feature phones allow you to send videos to your phone number for later viewing, in the same way you can download ringtones. Similarly, some users may have participated in social networking by tweeting via text message. Another possibility is that these respondents misread or misunderstood the question; however, that is unlikely to have been the case for all respondents.

## 5. How do you prefer to read content on your mobile device(s)? Check all that apply.

Our survey found that PDFs are the most popular way to read content on mobile devices.

Table 8. Reading preferences (general)

Format	Response	%
PDF	1,137	75%
Specialized e-book format (e.g. Kindle e-book, nook book, epub, etc.)	466	31%
On a website	882	58%
Other	43	3%

## Reading Preferences by Discipline

Specialized e-book formats were most popular among Social Science respondents. This makes sense, since Social Science respondents were also most likely to own e-reading devices.

Table 9. Reading preferences by discipline

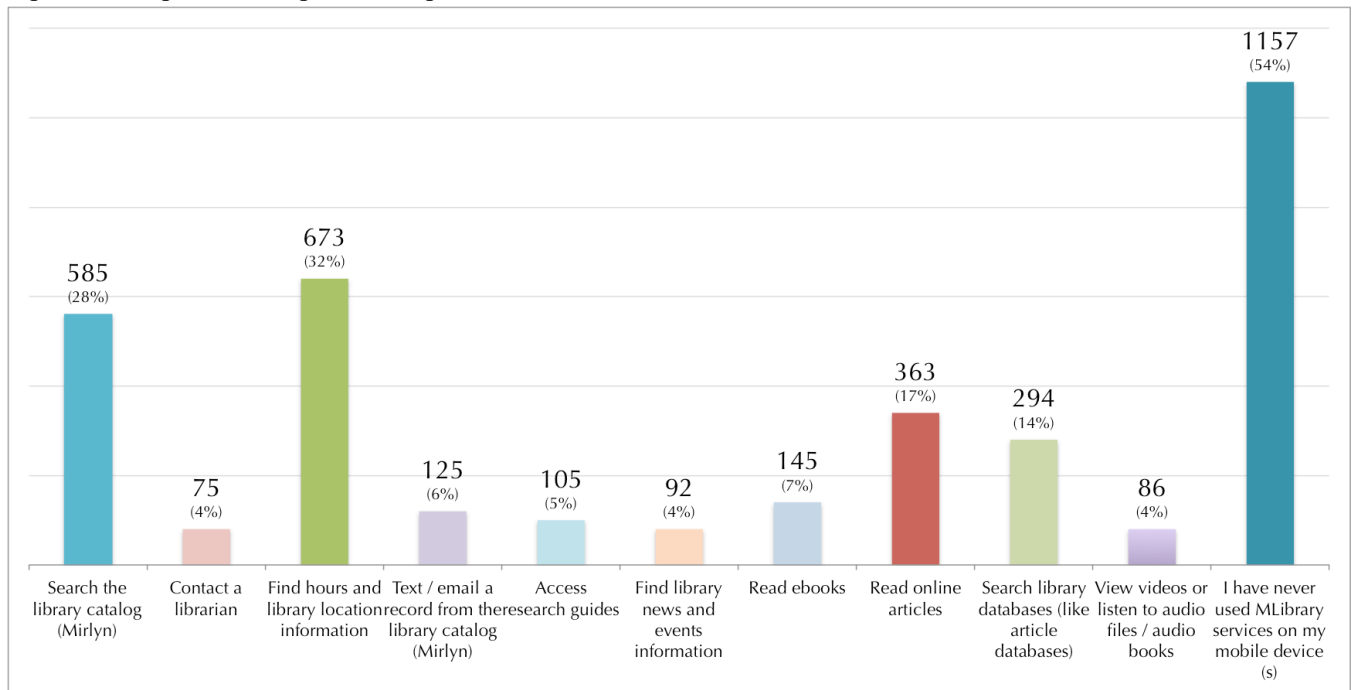
Format	STEM	LSA	A/H	SoSci
PDF	345 (76%)	527 (76%)	36 (82%)	166 (71%)
Specialized e-book format (e.g. Kindle e-book, nook book, epub, etc.)	136 (30%)	192 (28%)	6 (14%)	98 (42%)
On a website	267 (59%)	394 (57%)	24 (55%)	148 (63%)
Other	18 (4%)	16 (2%)	0%	6 (3%)

## 6. Have you ever used any of the following MLibrary services on your mobile device(s)? Check all that apply.

968 (46%) respondents said they have used at least one MLibrary service on a mobile device. Finding hours and library location information was the most frequently used service, followed by searching the library catalog.

Although 952 (42%) reported reading materials for research/class in Q4, only 363 (17%) reported reading online articles in Q6, and only 145 (7%) reported reading ebooks. This may indicate that respondents read other types of items for research/class on their mobile devices—perhaps news articles or class notes.

Figure 2. Usage of existing services (general)



## Use of services by respondents with phones without internet

Of the 238 respondents who said they had only a mobile phone without internet, 211 (87%) said they had never used any MLibrary services on their device. Two said they had texted/emailed a record from Mirlyn, and 1 said they had found library hours and location info.

## Use of services by status

Librarians and library staff used MLibrary services on their mobile devices more often than other groups. Undergraduates were most likely to have never used library services. The popularity of each service stayed relatively consistent across statuses. See Appendix E for this table.

## Use of services by discipline

In general, use of existing services was pretty much the same across disciplines. However, far more A/H respondents reported having searched the catalog from a mobile device (36%, or 25 respondents) than other disciplines (28% of STEM respondents (171); 28% of LSA respondents (278), and 26% of SoSci respondents (80)). A/H respondents were also more likely to have used library services from mobile devices in general: 52% (36) of A/H respondents said they had used at least one service, as opposed to 44% (135) of Social Science respondents, 46% (467) of LSA respondents, and 44% (273) of STEM respondents.

Table 9. Use of existing services by discipline

Service	STEM	LSA	A/H	SoSci
Search the library catalog (Mirlyn)	171 (28%)	278 (28%)	25 (36%)	80 (26%)
Contact a librarian	27 (4%)	32 (3%)	1 (1%)	12 (4%)
Find hours and library location information	174 (28%)	336 (33%)	25 (36%)	98 (32%)
Text / email a record from the library catalog (Mirlyn)	37 (6%)	50 (5%)	4 (6%)	21 (7%)
Access research guides	33 (5%)	49 (5%)	2 (3%)	13 (4%)
Find library news and events information	26 (4%)	38 (4%)	2 (3%)	17 (6%)
Read ebooks	46 (7%)	60 (6%)	4 (6%)	21 (7%)
Read online articles	116 (19%)	157 (16%)	13 (19%)	51 (17%)
Search library databases (like article databases)	99 (16%)	128 (13%)	10 (14%)	41 (13%)
View videos or listen to audio files/audio books	25 (4%)	43 (4%)	4 (6%)	8 (3%)
I have never used MLibrary services on my mobile device(s)	343 (56%)	541 (54%)	33 (48%)	170 (56%)

## 7. How could the library improve existing mobile-friendly services and resources? (e.g. MLibrary mobile, Mirlyn mobile, HathiTrust mobile)

Responses to this question ranged widely from concrete suggestions and criticisms to general praise. Several respondents said they did not know about mobile MLibrary services previously, and recommended that we promote these services more heavily. Respondents who had used mobile services before also frequently suggested building an app to have a more specialized, powerful interface. Another popular suggestion was e-book checkout.

Sample comments:

- I think it's excellent now!
- I think it is really good. I would love to see the ability to 'check out' ebooks if possible.
- Creating a mobile site with FULL functionality. It doesn't do much good to make a mobile site that is limited in ability.
- I didn't even know the tools existed. Possibly some advertising, I would like to know if research papers could be downloaded to phones/tablets etc. via pdf to be read, marked, and annotated.
- ILL functionality through the mobile site would be greatly appreciated. Also, a dedicated app (for Android in my case). The best case scenario as far as I'm concerned (although admittedly perhaps also the most difficult to implement) would be a generic UMich app that combines mirlyn, ctools and wolverine access.
- HathiTrust!

- I didn't realize there were mobile-friendly services!! Perhaps advertising them more... However I did search for e-books on the regular Mirlyn site, and could not find any. I think having a dedicated e-book section to the website would be helpful (the way public libraries often do), searchable by e-book format (Adobe epub, Kindle, PDF, etc).
- The mobile app is good, but could be better. I would like to have the ability to search articles plus on it.
- The mobile Mirlyn service is helpful (better than accessing by web), however, on the "My Accounts" info it would be helpful to have all the information available on the web (holds, fines, reserves, etc.) and not just the books currently checked out
- make ebooks available - currently no materials are available through the library (this relates to resources which do exist in commercial ebook format). / Increase ease of access to pdf or scanned resources through mobile devices (would reduce unnecessary photocopying of book chapters or articles when a digital version is already in the system).
- Develop a self-standing MLibrary app; have MLibrary mobile added to the UM app

## 8. How has mobile access to library resources and services changed your work?

As before, responses varied widely, and many respondents suggested building an app. One respondent stressed the importance of mobile access to research and reference information in the health care setting. Other respondents liked the convenience mobile access affords.

Sample comments:

- Makes research go faster
- It has made it more convenient and has allowed me to be more productive offsite
- It hasn't really. While it is nice to be able to access basic info on the go, the limitations of the physical device (small screen, poor upload times) make using it for internet purposes a last-ditch option.
- Yes... Reliable mobile resources allowing for more efficient patient care and the library needs to be able to allow health professionals to access the information resources on the run, in emergencies, in remote locations, and at the bedside. It is not being over dramatic to suggest that lives will depend upon the accessibility and usability of mobile resources and mobile technology available from the library.
- easier to remember books, call nbrs., I keep notes on my ipod and have a sheet where I note needed books and call nbrs. I used to loose my little slips of paper...
- makes it quick to check on availability of research.
- Its really hard to use so usually I just go to a computer

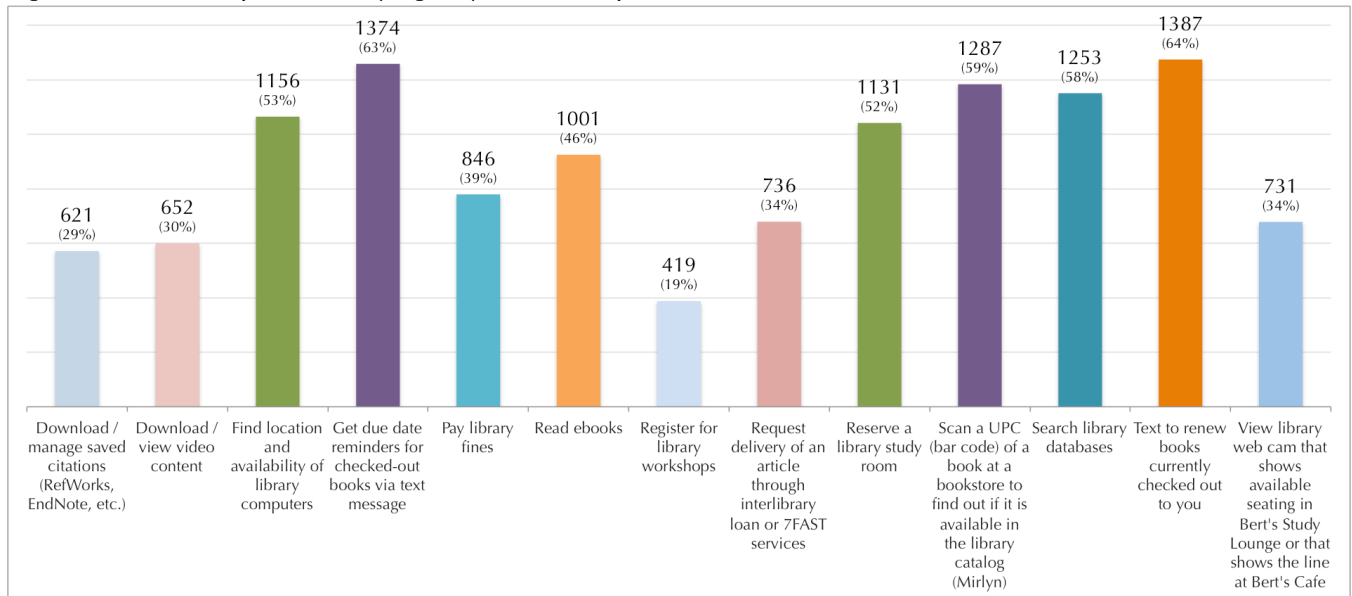


- It hasn't since I don't access from my phone but an app would probably change that.
- I like that I can find books on my phone, rather than having to find them on my computer, write them down and try to find them once in the library. It's VERY nice to be able to search quickly and easily from within the stacks.
- It hasn't up to now very much. I generally only need to use my mobile device to access library resources when I'm really in a pinch. With a very nice mobile app that includes lots of functionality, however, this could change drastically.
- I can now look for journal articles anywhere, which gives me something productive to do on the bus instead of playing angry birds. I really appreciate Mirlyn mobile!

## 9. Would you use the following services or activities if MLibrary provided them in a mobile-friendly interface?

The most popular potential service was texting to renew books (1387 respondents, or 64%), followed closely by getting due date reminders by text message (1374 respondents, or 63%), bar code scanning (1287 respondents, or 59%), searching databases (1253 respondents, or 58%), finding computers (1156 respondents, or 53%), and reserving study rooms (1131, or 52%). See Appendix F for the full chart of would, might, and would not use answers.

Figure 3. Percent respondents saying they would use potential services



## Projected Use by Discipline

In general, the relative popularity of potential services was consistent across disciplines. Arts and Humanities expressed more interest in several services than did other disciplines, including downloading/managing saved citations, requesting delivery of articles, and searching library databases. Requesting article delivery was also quite popular among Social Sciences respondents.

Table 10. Projected use of potential services by discipline

Service	STEM	LSA	A/H	SoSci
Download / manage saved citations (RefWorks, EndNote, etc.)	181 (28%)	305 (30%)	27 (39%)	71 (23%)
Download / view video content	189 (30%)	325 (31%)	22 (31%)	90 (29%)
Find location and availability of library computers	365 (57%)	563 (55%)	37 (53%)	143 (47%)
Get due date reminders for checked-out books via text message	380 (59%)	674 (65%)	48 (69%)	205 (67%)
Pay library fines	235 (37%)	411 (40%)	28 (40%)	130 (42%)
Read ebooks	302 (48%)	455 (44%)	32 (46%)	154 (50%)
Register for library workshops	110 (17%)	189 (18%)	16 (23%)	75 (25%)
Request delivery of an article through interlibrary loan or 7FAST services	201 (31%)	343 (33%)	29 (41%)	120 (40%)
Reserve a library study room	333 (52%)	564 (55%)	27 (39%)	165 (54%)
Scan a UPC (bar code) of a book at a bookstore to find out if it is available in the library catalog (Mirlyn)	381 (59%)	612 (59%)	42 (60%)	193 (63%)
Search library databases	368 (57%)	601 (58%)	51 (73%)	169 (55%)
Text to renew books currently checked out to you	366 (57%)	710 (69%)	46 (66%)	198 (65%)
View library web cam that shows available seating in Bert's Study Lounge or that shows the line at Bert's Cafe	213 (34%)	397 (39%)	17 (24%)	80 (27%)

## Projected vs. Past Use of Databases and Ebooks

Interestingly, many respondents said they would search library databases (1253, or 58% of all respondents) and read ebooks (1001, or 46%) if these services were offered in mobile-friendly formats. However, only 294 (14%) and 145 (7%) of respondents, respectively, have used these services already, even though they are already available on MLibrary mobile to some extent.

In general, questions about projected use of potential services are unreliable predictors of actual use for a variety of reasons. For example, users might intend to do research on their mobile device and check that they would use such a service, but in real life only ever do research on their laptops. The discrepancy in past use vs. projected use in our respondent pool here may be an example of this phenomenon. It could also be

that many respondents were simply unaware that such services already existed. Alternatively, it could be that respondents are dissatisfied with the current offerings: maybe the databases they are interested in are not available in a mobile-friendly format. In any case, it may be worth it to further explore what additional mobile services would be useful for our patrons.

## 10. What additional services or activities should the library provide for mobile device users?

Responses to this question varied from comments on the preceding list of potential services to suggestions for new services. Many centered around finding available spaces/resources (computers, seating, ebooks), navigating the stacks, and self-checkout.

Sample comments:

- Text tattling on annoying people talking singing or otherwise carrying on in the stacks or reference room
- Make a "wish list" for ILL so that you don't receive 10 books at once which are two in a week or two. It might function like a netflix cue.
- loaning system for ebooks - this is already a working service at public libraries, so the technology is already in use and available. Increase availability of materials through such a system should be an important goal (environmental benefits, no physical limitations on carrying around several books, etc...)
- The bar code idea is AWESOME. I would love that.
- web cams of the Bert's Study Lounge is scary!! That would be a very easy way to track and stalk people.
- web cam which shows available seating in main areas of libraries (Ugli basement, 1st and 2nd floors; grad reference room; etc)
- Roving packs of puppies?
- An app that would help me navigate through the stacks?
- Some way to tell a searcher when a book is supposed to be back if checked out, or if the library has/carries the book.
- It would also be very useful and time-saving if I could check out books on my own by scanning a code with my phone (cf. QR codes). The main logistical issue I see with this would be demagnetizing the book, or whatever is done so that the book does not set off the alarm when leaving the library. There may also be other security issues with this. It would also require either mobile devices be able to read books' current bar codes, or for books to be outfitted with QR codes (which might too be expensive and/or laborious for the library). But I think this could be a very useful and time-saving feature for students and faculty.

- chat with a librarian
- Mobile ILL/7FAST request and delivery would be excellent. Also, the text to renew books option is a great idea.

## **11. Is there anything else you would like to share with us regarding mobile devices and library services?**

This question elicited lots of thanks, as well as more suggestions for services.

Sample comments:

- Exciting stuff....what a world we live in!
- My texts cost me money - I would want to make sure I have the option to opt out of any such service. Don't make assumptions about technological upgrades!!!
- Try to make things so that you can do them via text, not only with internet connection. Lots of people have texting but not data.
- I honestly had no idea that any mobile library services existed, so maybe you can make it more publicized
- You may want to "talk" to the parents; engage them in various ways -- tell them about particular pieces in the Special Collections, for example, and invite them to come. Hire me and I will do all this for you! I am able to connect the library with many worlds -- of your choosing!
- Nope. Keep making it simple and easy to use and I think more people will utilize the system!
- maybe have a website that talks about what services are provided so that students/staff know that the services exist
- Possibly making Askwith media library a live feed online that can be accessed from any computer. That way we can have access to its videos when the library is not open (especially weekends).
- Thank you for asking us about what we would like rather than assuming our needs!
- Thank you for working so hard to help us!
- So glad you are doing this -- I really should make more effort to learn about and use what you have...!
- If there could be snack machines in the Grad library that would be really nice and amazing
- ILL needs a wider window for renewals.

## Lessons Learned

If we run this survey again, we should allow people to specify what activities they do on which devices. We should also be wary of questions asking people if they would use hypothetical services, as their projected use may not match up to actual use. Instead, we could ask respondents why they do or do not use existing services. We should also consider not including netbooks as mobile devices, since they are not traditionally considered mobile devices and their inclusion as an option seemed to confuse respondents. Future versions of this survey should clarify what “mobile devices without internet” are, as it is unclear whether they are feature phones or smartphones with no data plan, which may have different capabilities.

## Appendix A - Full Survey

### MLibrary Mobile Survey

MLibrary wants to discover how we can better design mobile library services that will help you -- UM-Ann Arbor students, researchers, faculty, and staff -- do your academic work.

This survey will take about **5-10 minutes** to complete. We respect your privacy; we will not associate your name with reported results.

If you are affiliated with the University of Michigan-Ann Arbor and you would like to enter the **drawing for one of four \$50 Amazon gift cards**, please provide your name and email at the end of the survey. The winners will be randomly selected and then contacted by email. Library employees are not eligible for the drawing.

Thank you for your participation. We appreciate your input!

#### Q1. What is your current University of Michigan status?

- ☐ Staff (1)
- ☐ Librarian/Library Staff (2)
- ☐ Researcher (3)
- ☐ Faculty (4)
- ☐ Graduate Student (5)
- ☐ Undergraduate Student (6)
- ☐ Other affiliation (please indicate): (7) \_\_\_\_\_
- ☐ Not affiliated (8)

*If 'Not affiliated' is selected, skip to Q3*

*If they answer Undergraduate, Graduate, Faculty, or Researcher, go to Q2A. Otherwise, go to Q2B.*

**Q2A What school or college are you primarily affiliated with? Please select one.**

- ☐ College of Architecture and Urban Planning (1)
- ☐ School of Art and Design (2)
- ☐ School of Business (3)
- ☐ School of Dentistry (4)
- ☐ School of Education (5)
- ☐ College of Engineering (6)
- ☐ School of Information (7)
- ☐ School of Kinesiology (8)
- ☐ Law School (9)
- ☐ College of Literature, Science and the Arts (10)
- ☐ Medical School (11)
- ☐ Officer Education Programs (12)
- ☐ School of Music, Theatre & Dance (13)
- ☐ School of Natural Resources and Environment (14)
- ☐ School of Nursing (15)
- ☐ College of Pharmacy (16)
- ☐ School of Public Health (17)
- ☐ School of Public Policy (18)
- ☐ School of Social Work (19)
- ☐ Other (20)

*If they choose Other, go to Q2.5A*

**Q2.5A You selected 'other' for your primary affiliation. Please describe:**

**Q2B What unit are you primarily affiliated with? Please select one.**

- ☐ College of Architecture and Urban Planning (1)
- ☐ School of Art and Design (2)
- ☐ Athletics (3)
- ☐ School of Business (4)
- ☐ Business / Financial Operations (not school / college affiliated) (5)
- ☐ Central Administration (6)
- ☐ School of Dentistry (7)
- ☐ School of Education (8)
- ☐ College of Engineering (9)
- ☐ Facilities / Operations (10)
- ☐ Health Services (11)
- ☐ School of Information (12)
- ☐ Institute or Center (not affiliated with Health Services) (13)
- ☐ School of Kinesiology (14)
- ☐ Law School (15)
- ☐ Libraries (16)
- ☐ College of Literature, Science, and the Arts (17)
- ☐ Medical School (18)
- ☐ Museums (19)
- ☐ Officer Education Programs (20)
- ☐ School of Music, Theatre & Dance (21)
- ☐ School of Natural Resources and Environment (22)
- ☐ School of Nursing (23)
- ☐ College of Pharmacy (24)
- ☐ School of Public Health (25)
- ☐ School of Public Policy (26)
- ☐ School of Social Work (27)
- ☐ Other (28)

*If they choose Other, go to Q2.5B*

**Q2.5B You selected 'other' for your primary affiliation. Please describe:**



**Q3 Which of the following types of mobile devices do you currently use?**

- ☐ Netbook computer (screen size under 11", e.g. Gateway Netbook, Lenovo Ideapad Netbook, HP Mini Netbook, etc.) (1)
- ☐ Tablet device (e.g. Apple iPad, Samsung Galaxy Tab, Amazon Kindle Fire, etc.) (2)
- ☐ Dedicated e-book reader (e.g. Amazon Kindle, Barnes & Noble Nook, Sony Reader, etc.) (3)
- ☐ iPod Touch (4)
- ☐ Mobile phone with internet (e.g. iPhone, Blackberry, Droid, etc.) (5)
- ☐ Mobile phone without internet (6)
- ☐ Other (please describe) (7) \_\_\_\_\_
- ☐ I don't have a mobile device (8)

*If they say they don't have a mobile device, to Q3.5*

**Q3.5 Do you intend to buy a mobile device in the next 12 months?**

- ☐ Yes (1)
- ☐ No (2)

*If they say no, go to end of survey. If they say yes, skip to Q8.*

**Q4 Which of the following activities do you do on your mobile device(s)? Check all that apply.**

- ☐ Access email (1)
- ☐ Listen to music or audio books or podcasts (2)
- ☐ Participate in social networking sites (e.g. Facebook, Twitter) (3)
- ☐ Play games (4)
- ☐ Read stuff for research/class (e.g. books, journal articles) (5)
- ☐ Read stuff for fun (e.g. news articles, blogs, books) (6)
- ☐ Search for information (e.g. getting directions, weather, locations, etc.) (7)
- ☐ Send/receive text messages (8)
- ☐ Use CTools (9)
- ☐ Use QR codes (10)
- ☐ Watch videos or screencasts (11)

*If they say they read stuff for research/class or for fun, go to Q4.5*

**Q4.5 How do you prefer to read content on your mobile device(s)? Check all that apply.**

- ☐ PDF (1)
- ☐ Specialized e-book format (e.g. Kindle e-book, nook book, epub, etc.) (2)
- ☐ On a website (3)
- ☐ Other (4) \_\_\_\_\_

Q5 Have you ever used any of the following MLibrary services on your mobile device(s)? Check all that apply.

- ☐ Search the library catalog (Mirlyn) (1)
- ☐ Contact a librarian (2)
- ☐ Find hours and library location information (3)
- ☐ Text / email a record from the library catalog (Mirlyn) (4)
- ☐ Access research guides (5)
- ☐ Find library news and events information (6)
- ☐ Read ebooks (7)
- ☐ Read online articles (8)
- ☐ Search library databases (like article databases) (9)
- ☐ View videos or listen to audio files / audio books (10)
- ☐ I have never used MLibrary services on my mobile device(s) (11)

Q6 How could the library improve existing mobile-friendly services and resources? (e.g. MLibrary mobile, Mirlyn mobile, HathiTrust mobile)

Q7 How has mobile access to library services and resources changed your work?

**Q8 Would you use the following services or activities if MLibrary provided them in a mobile-friendly interface?**

	WOULD use (1)	Might use (2)	Would NOT use (3)	No opinion (4)
Download / manage saved citations (RefWorks, EndNote, etc.) (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Download / view video content (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Find location and availability of library computers (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Get due date reminders for checked-out books via text message (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pay library fines (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Read ebooks (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Register for library workshops (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Request delivery of an article through interlibrary loan or 7FAST services (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Reserve a library study room (9)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scan a UPC (bar code) of a book at a bookstore to find out if it is available in the library catalog (Mirlyn) (10)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search library databases (11)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Text to renew books currently checked out to you (12)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
View library web cam that shows available seating in Bert's Study Lounge or that	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

shows the line at Bert's Cafe (13)				
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Q9 What additional services or activities should the library provide for mobile device users?

Q11 Is there anything else you would like to share with us regarding mobile devices and library services?

## Appendix B – Spotlight and Paper Tent

Fig 4. Spotlight graphic

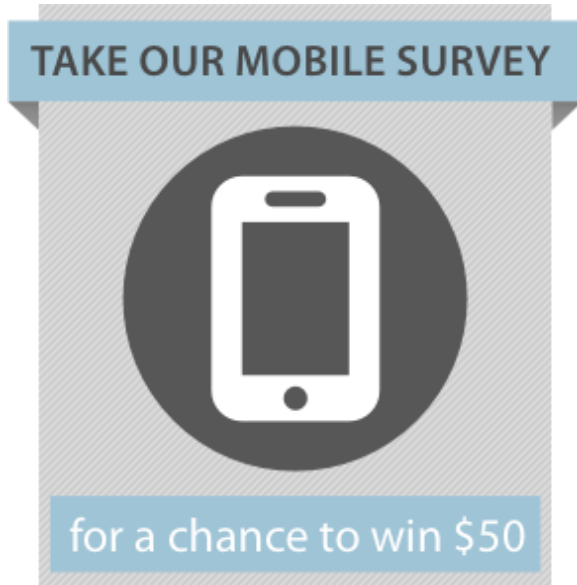


Fig. 5. Table tent graphic



## Appendix C – Breakdown of Respondents by Status and Affiliation

Unit	Staff	Librarian/ Library Staff	Researcher	Faculty	Graduate Student	Undergraduate Student	Other affiliation	Total
College of Architecture and Urban Planning	0	1	0	1	14	10	0	26
School of Art and Design	1	0	0	0	0	15	0	16
Athletics	0	0	0	0	0	0	0	0
School of Business	1	0	0	1	46	50	0	98
Business / Financial Operations (not school / college affiliated)	3	0	0	0	0	0	0	3
Central Administration	4	0	0	0	0	0	0	4
School of Dentistry	0	0	0	2	7	4	0	13
School of Education	2	0	6	8	41	20	0	77
College of Engineering	4	1	3	6	103	341	0	458
Facilities / Operations	1	0	0	0	0	0	0	1
Health Services	5	0	0	0	0	0	0	5
School of Information	0	0	0	1	50	0	0	51
Institute or Center (not affiliated with Health Services)	4	0	0	0	0	0	0	4
School of Kinesiology	0	0	0	1	2	26	0	29
Law School	2	0	0	1	56	0	0	59
Libraries	4	15	0	0	0	0	0	19
College of Literature, Science and the Arts	18	1	1	33	109	952	0	1114
Medical School	5	0	4	1	22	0	0	32
Museums	0	0	0	0	0	0	0	0
Officer Education Programs	0	0	0	0	0	0	0	0
School of Music, Theatre & Dance	1	0	0	1	6	26	0	34
School of Natural Resources and Environment	0	0	0	1	21	1	0	23

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Officer Education Programs	1	0	0	0	0	0	0	1
College of Pharmacy	3	0	1	1	19	0	0	24
School of Public Health	4	0	0	3	76	1	0	84
School of Public Policy	0	0	0	0	11	4	0	15
School of Social Work	1	0	0	1	39	0	0	41
Other	16	1	1	0	11	4	0	33

## Appendix D – Device Use by Status

Table X. Percent device use by status

	<b>Netbook</b>	<b>Tablet</b>	<b>E-book Reader</b>	<b>iPod Touch</b>	<b>Smartphon e</b>	<b>Phone without internet</b>	<b>Other</b>	<b>none</b>
Undergrads	15.02%	13.42%	10.23%	25.91%	69.17%	24.12%	1.59%	1.59%
Grads	20.74%	20.74%	17.67%	13.67%	72.35%	22.58%	2.15%	2.15%
Faculty	21.74%	37.68%	14.49%	11.59%	73.91%	13.04%	1.45%	5.80%
Staff	20.24%	29.76%	20.24%	19.05%	59.52%	28.57%	3.57%	1.19%
Librarians/Library staff	14.29%	28.57%	28.57%	14.29%	61.90%	19.05%	0.00%	0.00%
Researchers	12.50%	37.50%	18.75%	12.50%	81.25%	12.50%	0.00%	6.25%



## Appendix E – Use of Existing Services by Status

	<b>Undergraduate Students</b>	<b>Graduate Students</b>	<b>Faculty</b>	<b>Researcher</b>	<b>Staff</b>	<b>Librarian/Lib rary Staff</b>
Search the library catalog	21%	32%	30%	38%	27%	57%
Contact a librarian	3%	3%	4%	0%	7%	14%
Find hours and location info	26%	32%	29%	31%	30%	52%
Text/email a record from Mirlyn	3%	9%	4%	6%	11%	29%
Access Research Guides	4%	5%	9%	19%	4%	19%
Find library news and events info	3%	4%	6%	6%	11%	24%
Read ebooks	5%	8%	9%	13%	7%	14%
Read online articles	12%	20%	23%	25%	19%	43%
Search library databases	9%	19%	12%	25%	14%	24%
View videos	4%	3%	9%	0%	4%	14%
Never used MLibrary services on my mobile device(s)	52%	43%	39%	25%	52%	19%

## Appendix F – Responses to Potential Services

Table X. Responses to potential services

Potential Service	WOULD use	Might use	Would NOT use	No opinion
Download / manage saved citations (RefWorks, EndNote, etc.)	621	915	430	209
Download / view video content	652	948	392	181
Find location and availability of library computers	1,156	570	323	123
Get due date reminders for checked-out books via text message	1,374	502	197	111
Pay library fines	846	664	447	214
Read ebooks	1,001	728	324	112
Register for library workshops	419	853	595	296
Request delivery of an article through interlibrary loan or 7FAST services	736	803	378	251
Reserve a library study room	1,131	646	247	148
Scan a UPC (bar code) of a book at a bookstore to find out if it is available in the library catalog (Mirlyn)	1,287	550	203	135
Search library databases	1,253	665	162	98
Text to renew books currently checked out to you	1,387	523	170	97
View library web cam that shows available seating in Bert's Study Lounge or that shows the line at Bert's Cafe	731	571	634	220